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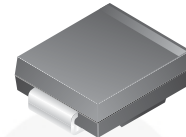


May 2015

# S3A - S3N General-Purpose Rectifiers

## Features

- Low-Profile Package
- Glass-Passivated Junction
- UL Flammability Classification: 94V-0
- UL Certified, UL #E258596



**SMC/DO-214AB**  
COLOR BAND DENOTES CATHODE



## Ordering Informations

Part Number	Top Mark	Package	Packing Method
S3A	S3A	DO-214AB (SMC)	Tape and Reel
S3B	S3B	DO-214AB (SMC)	Tape and Reel
S3D	S3D	DO-214AB (SMC)	Tape and Reel
S3G	S3G	DO-214AB (SMC)	Tape and Reel
S3J	S3J	DO-214AB (SMC)	Tape and Reel
S3K	S3K	DO-214AB (SMC)	Tape and Reel
S3M	S3M	DO-214AB (SMC)	Tape and Reel
S3N	S3N	DO-214AB (SMC)	Tape and Reel

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value								Unit
		S3A	S3B	S3D	S3G	S3J	S3K	S3M	S3N	
$V_{RRM}$	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	1200	V
$I_{F(AV)}$	Average Rectified Forward Current $T_L = 105^\circ\text{C}$	3.0								A
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	100								A
$T_{STG}$	Storage Temperature Range	-55 to +150								$^\circ\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to +150								$^\circ\text{C}$

**Thermal Characteristics<sup>(1)</sup>**

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	2.6	W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	100	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction-to-Lead	13	°C/W

**Note:**

1. Device is mounted on FR-4 PCB 0.013 mm. Land pattern size: refer to the package drawing.  
Trace size: force line = 50 mil & sense line = 4 mil.

**Electrical Characteristics**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	Value							Unit
			S3A	S3B	S3D	S3G	S3J	S3K	S3M	
$V_F$	Maximum Forward Voltage	$I_F = 3.0\text{ A}$	1.2							V
$t_{rr}$	Maximum Reverse Recovery Time	$I_F = 0.5\text{ A},$ $I_R = 1.0\text{ A},$ $I_{rr} = 0.25\text{ A}$	2.5							$\mu\text{s}$
$I_R$	Maximum Reverse Current at rated $V_R$	$T_A = 25^\circ\text{C}$	5							$\mu\text{A}$
		$T_A = 125^\circ\text{C}$	250							
$C_T$	Typical Total Capacitance	$V_R = 4.0\text{ V},$ $f = 1.0\text{ MHz}$	60							pF

## Typical Performance Characteristics

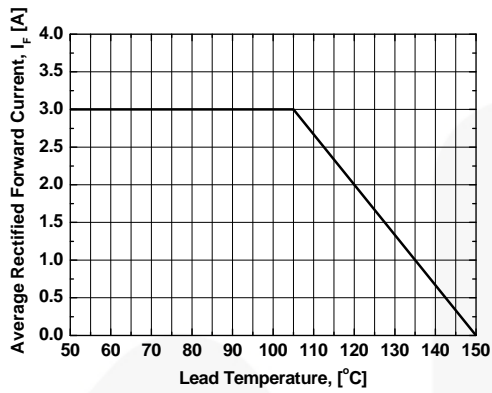


Figure 1. Forward Current Derating Curve

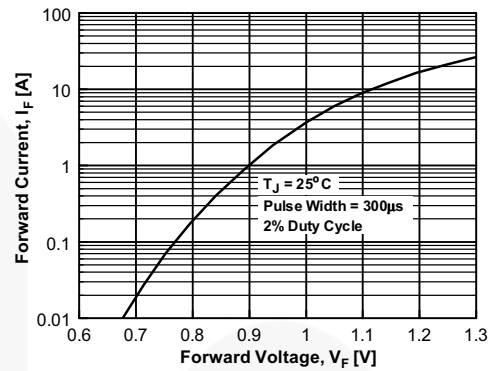


Figure 2. Forward Voltage Characteristics

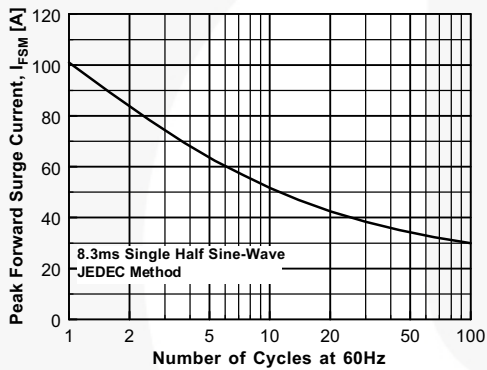


Figure 3. Non-Repetitive Surge Current

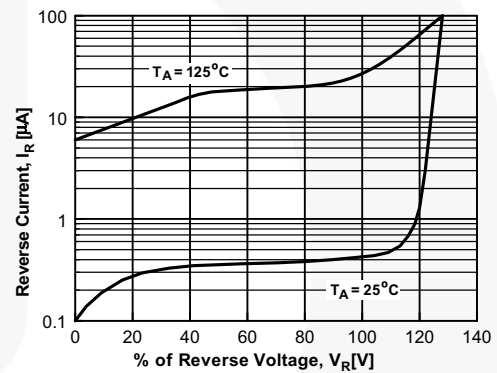


Figure 4. Reverse Current vs. Reverse Voltage

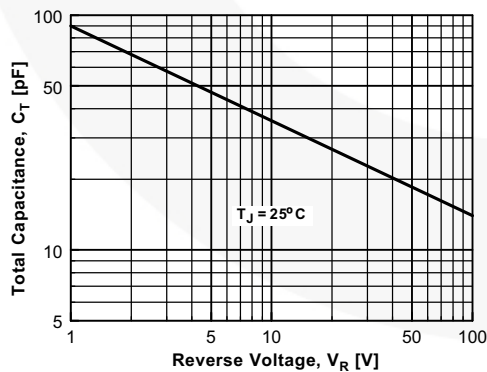
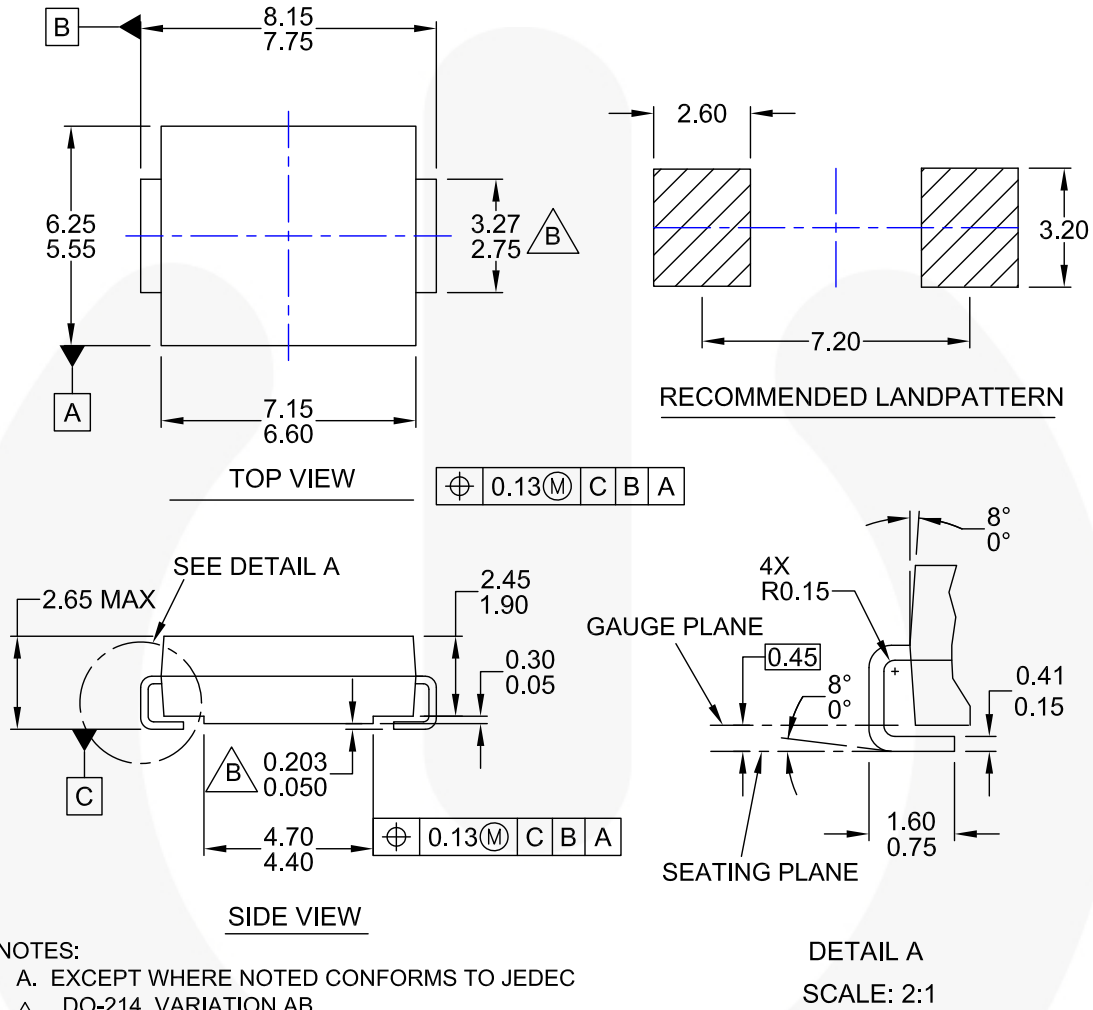


Figure 5. Total Capacitance

Physical Dimensions



- NOTES:
- A. EXCEPT WHERE NOTED CONFORMS TO JEDEC DO-214, VARIATION AB.
  - B. DOES NOT COMPLY TO JEDEC STD. VALUE.
  - C. ALL DIMENSIONS ARE IN MILLIMETERS.
  - D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.
  - E. DIMENSIONS AND TOLERANCING AS PER ASME Y14.5M-1994
  - F. LAND PATTERN STANDARD: DIOM7957X241M
  - G. DRAWING FILE NAME: DO214ABREV1

Figure 6. 2-Lead, SMC, JEDEC DO-214, Variation AB



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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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